

SWAN LAKE

QUARTERLY NARRATIVE REPORTS

FEBRUARY 1941 - JANUARY 1942

ROUTING SLIP

DIVISION OF WILDLIFE REFUGES

DATE: 2-16 1939 42

MR. SALYER: _____

SECTION OF HABITAT IMPROVEMENT:

① ~~MRS. WOODIN:~~ _____~~Mr. Kubichek~~ _____~~MR. ELMER:~~ _____~~Mr. Smith~~ PAT 2/23/42

MISS GARRISON: _____

~~Mr. Griffith~~ PEG 4/18/42~~Miss Cook~~ Wve 3-24-42

SECTION OF OPERATIONS:

K. Sumner
Mr. Ball WK 3/22

SECTION OF ERA:

~~Mr. Regan~~ WGR 4/20/42

② Mrs. Watkins _____

~~Dr. Bourn~~ WAB 4/20/42

Mrs. Kricun _____

Mr. Sommers _____

Miss Riley _____

SECTION OF LAND MANAGEMENT:

~~Mr. Farnsworth~~ B~~Mr. Ackelmecht~~ 4-17
CWA

STENOGRAPHERS:

DIVISION FILES:

SECTION OF STRUCTURES:

Faylor WVT 5/20

REMARKS:

Swan Lake Quarterly
November - January 42

Return to:

Div. Files

SWAN LAKE NATIONAL WILDLIFE REFUGE

Quarterly Narrative Report
November, 1941 - January, 1942

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TRANSMITTED BY REGIONAL OFFICE

2/12/42

SWAN LAKE NATIONAL WILDLIFE REFUGE

Quarterly Narrative Report
November, 1941 - January 1942

I. GENERAL

Principal field activities at this station during the November-January quarter included maintenance of refuge equipment and property, supervision of the WPA work program, refuge patrol, supervision of operations by permittees, and waterfowl banding.

The refuge development program was sufficiently advanced this season to accommodate the fall flight. Heavy rains during October filled the recently completed upper pool to capacity, and about 3500 acres of water and marsh were available for waterfowl. During previous fall flights the birds were forced to concentrate in shallow borrow pits and creek channels within the refuge or continue their migration. About 300,000 waterfowl concentrated at the refuge this fall, as compared to a peak concentration of 25,000 last year (1940). Canada Geese were also observed in some numbers for the first time, about 800 birds being noted on the upper lake at the height of the migration. Only small flocks of 25 to 100 geese were observed during previous fall migrations.

Bald eagles, mostly immature birds, appeared at the refuge in some numbers this fall. Single birds or pairs have been occasionally noted during past years, but in November and December four to five birds could be observed daily in the flooded timber of the upper pool, and seven eagles were observed on one occasion.

A. Weather Conditions*

	<u>Snowfall</u>	<u>Rainfall</u>	<u>Max. Temp.</u>	<u>Min. Temp.</u>
November	--	1.34	78	13
December	T.	2.22	63	13
January	$\frac{T.}{T.}$	$\frac{.40}{3.96}$	$\frac{60}{78}$	$\frac{-10}{-10}$

*Readings: Brookfield, Missouri Station

B. Water Conditions

The upper pool filled to capacity (12,000 acre feet) twice during this quarter, and it was necessary to operate the control gate from November 1 to 15, December 22 to 31, and January 1 to 17. Approximately 16,000 acre feet of water were released through the control gate of this unit during the three-month period. This unit has been maintained at a 63-64 foot level in compliance with previous instructions, and the gate was closed on January 17 in accordance with new instructions to maintain the pool at spillway level, or 667.

C. Fires

One small grass fire occurred during this period. This was extinguished without damage, other than the burning of a small area of weeds and grass.

II. WILDLIFE

A. Waterfowl

Canada Goose (*Branta canadensis canadensis*)

First migration: October 10, 1941

Period of max. abundance: Oct. 22 to 31; Est. 800

Last migration: November 10

Remarks: Flock of 75 to 100 birds have wintered on
refuge this season. A flock of 250-300 arrived
from the south on January 26.

Blue Goose (*Chen caerulescens*)

Lesser Snow Goose (*Chen cyperborea hyperborea*)

A few small mixed flocks observed from Oct. 10 to 22.

Common Mallard (*Anas platyrhynchos*)

First migration: Sept. 10

Period of max. abundance: Oct. 21-30 (est. 20,000)

Nov. 10-Dec. 30 (est. 150,000)

Last noted as migrant: January 1, 1942

Remarks: Several thousand mallards wintered at the
refuge this year.

Black Duck (*Anas rubripes*)

Remarks: Scattered birds noted among flocks of common
mallards from Oct. 15 on. Hunters report this
species more abundant this year than in any previous
season. A few birds wintered at the refuge.

Gadwall (*Chaulelasmus streperus*)

First migration: October 17

Period of max. abundance: Oct. 25 to Nov. 20 (2000
to 3000)

Gadwall (continued)

Remarks: This bird appeared at the refuge in
considerable numbers this season.

Baldpate (Mareca americana)

First migration: October 17

Period of max. abundance: Oct. 25 to Nov. 21

Last noted as migrant: December 21

Remarks: Common fall migrant; est. 5000 at refuge
during height of migration.

American Pintail (Dafila acuta tzitzihua)

First migration: Sept. 11

Period of max. abundance: Nov. 1 to Dec. 15;
est. 100,000

Last noted as migrant: December 25

Remarks: A few pintails have wintered at the refuge
this season.

Green-Winged Teal (Nettion carolinense)

First migration: Sept. 28

Period max. abundance: Oct. 20 to Nov. 15; 5000 birds

Last noted as migrant: December 15

Blue-Winged Teal (Querquedula discors)

First migration: August 7, 1941

Height of migration: Sept. 25 to Oct. 5; est. 5000

Last noted as migrant: November 1

Shoveller (*Spatula clypeata*)

First migration: September 25

Period of max. abundance: Oct. 15 to 30; est. 5000

Final migration: November 15

Remarks: 3 shovellers observed as late as Dec. 21.

This species appeared at refuge in some numbers
this fall.

Wood Duck (*Aix sponsa*)

First migration: August 15

Period of max. abundance: Throughout September; concentrations of 200 to 500 birds observed on upper pool.

Final migration: November 10

Remarks: Common migrant and nesting bird in this area.

Redhead (*Nyroca americana*)

First migration: October 10

Period of max. abundance: Nov. 1 to Dec. 10; est. 1000

Last noted as migrant: December 20

Remarks: A small raft of about 1000 birds observed
daily on the upper pool during this period.

Ring-Necked Duck (*Nyroca collaris*)

First migration: October 10

Period of max. abundance: Oct. 27 to Dec. 15; est. 5000

Last noted as migrant: December 21

Remarks: Most abundant of diving ducks at refuge this fall.

Lesser Scaup (Nyroca affinis)

First migration: October 10

Period of max. abundance: Oct. 27 to Dec. 15;
estimate 3000

Last noted as migrant: December 21

Goldeneye (Glaucionetta clangula americana)

First migration: October 30

Remarks: A few scattered birds passed through during
November.

Ruddy Duck (Erismatura jamaicensis)

Only record: 3 birds observed Dec. 21

American Merganser (Mergus merganser americanus)

Hooded Merganser (Lophodytes cucullatus)

Remarks: A few of these birds observed during late
November and December. A number of American
Mergansers have wintered at the refuge this season.

The 1941 fall flight was the heaviest observed here since establishment of the refuge. Several thousand birds have also wintered here this season; and there was some evidence of spring migration beginning as early as January 26, when large flocks of mallards and a few Canada Geese began to appear.

B. Upland Game Birds

Prairie chickens (Tympanuchus cupido americanus) are wintering at the refuge in about the same numbers as the 1940-41 season, 200 to 250 birds. There has been considerable migration of the flocks between the refuge and adjacent uplands this fall, possibly due to flooding of the refuge bottoms and presence of water in the grain fields provided for

feeding grounds. Feeding conditions have been ideal for waterfowl in the refuge fields but not especially suitable for upland game birds. The birds are usually observed feeding along the margins of cornfields, in winter grain pasture, and on the new seeding along the refuge levees.

The Bob-white population is approximately the same as that of the previous season. One covey has taken up its winter range in the headquarters yard.

Only one pheasant has been observed this winter.

C. Big-game Animals

(omitted)

D. Fur-bearing Animals, Predators, Rodents and Other Animals

There has been a general increase in fur bearers each year since establishment of the refuge, and it will be possible to harvest surplus furs of mink, striped and spotted skunks, and probably muskrat by the 1942-43 season. Some evidence of predation by mink on waterfowl was observed in the marshes this fall. It is believed that the animals were taking chiefly crippled birds which reached the refuge from adjacent gun club lakes. Further study will be given this matter to determine to what extent trapping is necessary.

From two to five coyotes are usually present on the refuge. Control work was started in December for coyotes and skunks, but it became necessary to suspend trapping operations temporarily pending return to duty of the Laborer-Patrolman, who has been on leave while recovering from illness.

E. Fish

Conditions for fish life are improving in the refuge pools as aquatic vegetation is becoming established in some sections and the water is clearing up remarkably well. Some numbers of bullheads, catfish, crappie and bluegills are already established in the upper pool and borrow pits. Recommendations for stocking, public fishing, etc., will be included in a detailed plan to be submitted at a later date.

III. REFUGE DEVELOPMENT AND MAINTENANCE

A. Physical Development

Major CCC construction projects undertaken this quarter included quarrying and placing of additional rock in the lower spillway, extension of riprap and wing walls at the outlet of the No. 3 control gate, completion of the No. 5 levee and control gate, construction of 100 rods of standard fencing, razing remaining farm buildings, and additional dragline work on the No. 4 levee. This dyke is to be completed this spring and the Swan Lake unit will then be placed in operation. A Squaw Creek type barn is also under construction by CCC at the refuge headquarters.

B. C. D. (Plantings, Collections, Distribution)

(next quarter)

B. WPA Project

A 10-man WPA project has been approved for the Swan Lake Refuge and was opened December 31, 1941. This project includes

planting of additional trees and shrubs, sodding and seeding levees, seed collection, planting aquatic vegetation, general cleanup work, fencing, construction of a poultry house at each headquarters, earth fill dam, and performance of appurtenant and incidental work.

As road and weather conditions were generally unfavorable for transplanting at this season, the WPA crew was assigned to general cleanup work during January, to remove fire hazards, clean up unsightly trash piles, old farm building sites, and sort and store usable salvaged materials for survey.

The WPA tree planting project will be started in February and continue through March. The levee planting program will follow through April and May, and construction work will be undertaken during the summer months.

IV. PUBLIC RELATIONS

A. Recreational Uses

1. Hunting

Most of the local hunting clubs and individual hunters contacted this fall reported good shooting in the vicinity of Swan Lake, and all stated that the flight was the heaviest in many years. A Kansas City sportsman who owns a lake adjacent to the refuge formerly expressed the opinion that the refuge would "spoil the shooting on his property, as the birds would not leave the refuge." On the final day of the season we happened to contact him while on patrol duty, and were advised

that his club had had the best shooting in many years. He attributed this to the large number of birds attracted by the refuge and stated that he had completely changed his mind on this subject.

Two Chillicothe, Missouri, hunters bagged ten species of ducks during a single day's hunt on a small lake in this vicinity.

The postoffices at the local villages of Sumner and Mendon report a considerable increase in the number of stamps sold to local hunter:

		Stamps Sold	
		1940	1941
Mendon	16	40
Sumner	10 (Est.)	61

2. Visitors

About 150 visitors stopped at the refuge during weekends in November and December, when road and weather conditions were suitable. Most of these people came from the nearby cities of Chillicothe, Brookfield, Carrolton, Moberly, and Brunswick.

Service officials inspecting the refuge this quarter included Mr. F. C. Gillett, Mr. W. E. Hall, and Mr. Vroman of the Regional office; and Mr. Curtis S. Allin, Game Mgt. Agent of Jefferson City. State officials visiting the refuge included Conservation Agents McKinney and Bickel, and County Sheriff Widmer.

B. Violations

Two men, Everett Geromini and Edwin Smith, both of Mendon, Missouri, were apprehended by the writer December 14, while trespass hunting with dogs in a remote, timbered section of the refuge. One of the men did not have a state hunting license in his possession, and this case was turned over to the local conservation agent for prosecution. Inasmuch as this case was to be tried locally, it seemed advisable to handle the trespass charges in state court also, and this charge was filed against the men by the agent, with the writer acting as complainant. The men received a \$10 (maximum) fine and \$9.45 costs each in Justice W. D. West's court on December 16, on a charge of trespass hunting on enclosed property; and Geromini was fined an additional \$1.00 and costs of \$9.45 for hunting without a license.

V. ECONOMIC USES OF REFUGE

A. Grazing

One grazing permit was issued, authorizing the grazing of 25 cattle for one month, at 50¢ per head per month, and revenue collected amounted to \$12.50.

B. Timber Removal

Eleven permits were issued for removal of firewood. 63 cords of wood were removed and revenue collected totalled \$47.25.

C. Cooperative Farming

(see next page)

C. Cooperative Farming

<u>Permittee</u>	<u>Grain</u>	<u>Acreage</u>	<u>Yield</u>	<u>Govt. Share</u>
H. H. Atterbury Permit #3611	Soybeans ✓	45	20 bu.	8 acres ✓
Downey & Thornsberry Permit #4283	Oats ✓	35	35 bu.	14 acres ✓
	Soybeans ✓	35	30 bu.	14 acres ✓
	Corn ✓	100	60 bu.	40 acres* ✓
	*400 bu. husked later for feeding purposes on refuge			
John Schafer Permit #4239	Corn ✓	90	40 bu.	35 acres ✓
	Soybeans	30 ✓	25 bu.	15 acres ✓
Williams Bros. Permit #4291	Soybeans ✓	30 ✓	25 bu.	30 acres ✓
	Corn ✓	10	15 bu.	50 bushels ✓
Maurice Williams Permit #4292	Cane ✓	35	25 bu.	14 acres
J. R. Fox Permit #4293	Corn ✓	53	40 bu.	250 bushels ✓ (cut & shocked)
	Soybeans ✓	27	25 bu.	675 bushels* ✓ (*cut & shocked for winter feeding)
Nyle Bloss Permit #4294	Corn ✓	50	45 bu.	20 acres ✓
Ray Johnson Permit #4295	Soybeans ✓	30	20 bu.	12 acres
Kenneth McKee Permit #4296	Cane ✓	40	30 bu.	16 acres

43
560

Farm crop yields on the refuge and adjacent farms were cut considerably by the heavy fall rains, which battered and lodged the fields and rotted the grain. In some instances, permittees were unable to harvest part of their crops and left the fields untouched. Over 13 inches of rain fell during the month of October, and some fields throughout the entire county were covered by surface water and unhusked as late as January.

Complaints were received from three farmers residing south of the refuge of waterfowl feeding in cornfields. During normal seasons there is little or no complaint from this source, as the corn stands up well and husking is finished before the main flight arrives. The refuge fields held most of the birds this fall and kept such complaints to a minimum.

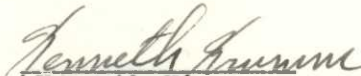
VI. FIELD INVESTIGATION - RESEARCH

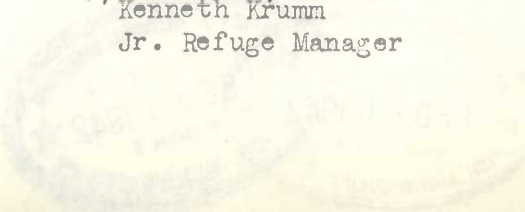
A. Bird Banding

A bird banding station was opened at the refuge late in November. Due to cold and freezing weather, operations were suspended after one week of trapping, but we were able to band 158 birds during this short period:

<u>Species</u>	<u>No. banded</u>
Mallard	153
Black duck	2
Pintail	2
Green-winged teal	1

The refuge should become an important banding station in future seasons. Large concentrations of waterfowl may be expected in the future, and the general increase in all wildlife will afford many interesting problems for investigation and research.


Kenneth Krumm
Jr. Refuge Manager



and birds were received from three farmers residing south of the refuge of waterfowl feeding is normal. During normal seasons there is little or no complaining from this source, as the corn stands up well and feeding is continued below the main flight lines. The refuge birds held most of the birds this fall and kept such complaints to a minimum.

VI. FISH INVESTIGATION - INDIANAPOLIS

A. Bird Feeding

A bird feeding station was opened at the refuge late in November. Due to cold and freezing weather, operations were suspended after one week of feeding, but we were able to band 150 birds during this short period:

Species	No. banded
Goldeneye	155
Black duck	2
Pintail	2
Lesser-winged teal	1

The refuge should become an important banding station in future seasons. Large concentrations of waterfowl may be expected in the future, and the general increase in all wildlife will afford many interesting problems for investigation and research.



ROUTING SLIP

DIVISION OF WILDLIFE REFUGES

DATE: 12-3-1941☒ MR. SALYER

SECTION OF HABITAT IMPROVEMENT:

☒ ① ~~MRS. WOODIN~~ new 12/10~~Mr. Kubichek~~☒ ~~MR. EIMER~~ ACE 1/12~~Mr. Smith~~ PRH 1/23/42~~MRS. GARVIN~~~~Mr. Griffith~~ DEG 12/15/41☒ ~~MR. DUMONT~~ PAD 12/29~~Miss Cook~~ WUC 12-☒ SECTION OF OPERATIONS:

SECTION OF ERA:

~~Mr. Kummer~~ WT 1/12~~Mr. Regan~~ 1892 2/1/42~~Mr. Gustafson~~ RB 1/14~~Dr. Bourn~~ was 1/1/42☒ ② ~~Miss Baum~~ DM

Mrs. Fishman

Mrs. Kricun

☒ SECTION OF LAND MANAGEMENT:

STENOGRAPHERS:

~~Mr. Barrow~~ B~~Miss Whorley~~ W 12-8-41~~Mr. Ackersnecht~~ 1-12☒ SECTION OF STRUCTURES:~~Mr. Meyer~~ WWT 1/21/42

REMARKS:

Swan Lake Quarterly
August-October 1941

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IN REPLY REFER TO

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Swan Lake
Narrative Report

UNITED STATES
DEPARTMENT OF THE INTERIOR
FISH AND WILDLIFE SERVICE
OFFICE OF REGIONAL DIRECTOR
500 NATIONAL BUILDING
MINNEAPOLIS, MINNESOTA

REGION 3
—
NORTH DAKOTA
SOUTH DAKOTA
NEBRASKA
MINNESOTA
IOWA
MISSOURI
WISCONSIN
MICHIGAN
ILLINOIS
INDIANA

December 1, 1941

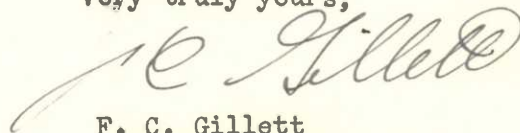
The Director,
Fish and Wildlife Service,
Washington, D. C.

Dear Sir:

There is enclosed the quarterly narrative report for the Swan Lake National Wildlife Refuge, Missouri, covering the period August - October, 1941, submitted by Mr. Kenneth Krumm, Refuge Manager.

The report was returned to the refuge manager for correction which delayed the transmittal to the Washington office.

Very truly yours,



F. C. Gillett
Refuge Inspector

Enclosure





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L. C. GRIFF

ΔΕΛΤ. ΕΛΛΗΝ. ΔΟΜΗΣ

011709.

Класс: Математика

двертунзон, D. C.

LETTER AND ATTACHED RELAYED

DECEMBER 1, 1951

R
Swan Lake
Narrative Report

UNITED STATES
DEPARTMENT OF THE INTERIOR
FISH AND WILDLIFE SERVICE
OFFICE OF REGIONAL DIRECTOR
500 NATIONAL BUILDING
MINNEAPOLIS, MINNESOTA

REGION 3
—
NORTH DAKOTA
SOUTH DAKOTA
NEBRASKA
MINNESOTA
IOWA
MISSOURI
WISCONSIN
MICHIGAN
ILLINOIS
INDIANA

December 1, 1941

The Director,
Fish and Wildlife Service,
Washington, D. C.

Dear Sir:

There is enclosed the quarterly narrative report for
the Swan Lake National Wildlife Refuge, Missouri, covering
the period August - October, 1941, submitted by Mr. Kenneth
Krumm, Refuge Manager.

The report was returned to the refuge manager for
correction which delayed the transmittal to the Washington
office.

Very truly yours,

F. C. Gillett
Refuge Inspector

Enclosure





STANDARD

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U. S. DEPT. OF THE INTERIOR

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STANDARD

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STANDARD WILDLIFE SERVICE
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STANDARD WILDLIFE SERVICE

December 1, 1941

MINNEAPOLIS, MINNESOTA

200 NATIONAL BUILDING

OFFICE OF REGIONAL DIRECTOR

FISH AND WILDLIFE SERVICE

DEPARTMENT OF THE INTERIOR

UNITED STATES

STANDARD WILDLIFE SERVICE

STANDARD WILDLIFE SERVICE

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IN REPLY REFER TO

INDIANA
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MISSOURI
IOWA
MINNESOTA
NEBRASKA
SOUTH DAKOTA
NORTH DAKOTA

REGION 3

SWAN LAKE NATIONAL WILDLIFE REFUGE

Quarterly Narrative Report
Aug.-Sept.-Oct., 1941

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TRANSMITTED BY REGIONAL OFFICE

12/1/41

SWAN LAKE NATIONAL WILDLIFE REFUGE

Quarterly Narrative Report
August-September-October, 1941

I. GENERAL

Principal field activities at this station during this quarter included planting and seeding of levees, supervision of share cropping operations, special use permits, seed collection, and maintenance of refuge equipment and property.

CCC construction during this period included building of the No. 5 levee and 4-foot control structure on the Swan Lake unit, additional earth work on No. 4 levee, and laying of additional riprap in the lower spillway. Work on these structures is nearing completion, and the second of the three refuge pools will be ready for operation by the spring of 1942.

The heavy rainfall during October filled the refuge lakes, sloughs, and upper pool to capacity, and the heaviest fall flight and concentration of waterfowl occurred here since establishment of the refuge. At least 50,000 waterfowl were present on the area during the last week of October and this number increased to 100,000 during the first days of November. The largest fall concentration previously observed (1940) was estimated at 25,000 birds.

Large numbers of pelicans, cormorants, herons, bitterns, grebes, gulls, and other marsh and water birds also concentrated here this fall where only a few individuals or small flocks of these species were observed in previous seasons.

Maximum for each species
totals only 65,000
wa

Survey
note
Nbw

Weather Conditions

	<u>Rainfall</u>	<u>Max. Temp.</u>	<u>Min. Temp.</u>
August	2.26	99	53
September	4.30	no data	no data
October	<u>13.31</u>	<u>84</u>	<u>24</u>
Total	19.87 (extremes)	99	24

(temperature records for August ... St. Joseph Weather Bureau
precipitation records, Aug. & Sept... CCC records
records for October USDA Observer Sta., Brookfield,
Missouri)

Total precipitation during this period was 19.87 inches, most of the rainfall occurring during October. Local weather bureau stations report that rainfall during this month was the heaviest on record for October.

Water Conditions

The October rains created a heavy runoff in the Elk-Turkey Creek Watershed which supplies the refuge lakes, and the upper pool filled to 665.6 on October 31 and to spillway level (66.7) on November 2. The control gate in the No. 3 levee has been operated since October 6 to aid in controlling flood water. The new levees withstood effects of high water and wave action without serious erosion, and the water level is now being lowered to 663 to protect the new seeding and check wash on the slopes during the winter months.

II. WILDLIFE

The principal species of waterfowl and other waterbirds observed during the early fall migration are as follows:

Waterbirds

White Pelican (*Pelican⁵ erythrorhynchos*)

First migration - September 4, 1941

Remarks: Concentration of about 1000 noted on upper pool throughout September and first half of October.

A few birds remaining on October 31.

Double Crested Cormorant (*Phalacrocorax auritus auritus*)

A considerable number of these birds observed at the refuge from September 15 to October 31.

Great Blue Heron (*Ardea herodias herodias*)

Large numbers of blue herons observed from July 15 to Oct. 20 on upper pool. Summer resident; no nesting records established for refuge to date.

American Egret (*C. Albus egretta*)

Little Blue Heron (*F. caerulea caerulea*)

Common late summer migrants. Many observed from July 15 to October 1 on upper pool.

Little Green Heron (*Butorides virescens virescens*)

Common summer resident.

Black-crowned Night Heron (*Nycticorax nycticorax hoactli*)

Common migrant.

American Bittern (*Botaurus lentiginosus*)

Common summer resident and nesting bird.

Least Bittern (*Ictobrychus exilis exilis*)

Common migrant.

Waterfowl

✓
Canada Goose (*Branta canadensis canadensis*)

First migration - October 10, 1941

Height of migration - October 22-31 (800 birds)

Last migration - number of birds remaining during first week
of November

Remarks: - Heaviest fall migration observed to date; 800 birds
were observed on upper pool during height of migration
in late October.

Blue Goose (*Chen caerulescens*)

✓
Lesser Snow Goose (*Chen hyperborea hyperborea*)

A few mixed flocks of 50-200 birds observed from October 10-22.

✓
Common Mallard (*Anas platyrhynchos*)

First migration - September 10

Period of max. abundance - Last week of October about 20,000
birds had concentrated at refuge.

✓
Black Duck (*Anas rubripes*)

Scattered birds noted among flocks of common migrant during
latter half of October.

✓
Gadwall (*Chaulelasmus streperus*)

First migration - October 17

Height migration- October 25 - on

Remarks - This bird appeared at the refuge in considerable
numbers this season; estimate 2 - 3,000 present during
last week of October.

Baldpate (*Mareca americana*)

First migration - October 17, 1941

Period max. abundance - October 25 ----

Remarks - Common fall migrant. Estimate 5,000 birds at refuge
during last week of October.

American Pintail (*Dafila acuta tzitzihua*)

First migration - September 11, 1941

Period max. abundance - October 20 ----

Remarks - Estimate 10 to 15,000 present during
last half of October.

Green-Winged Teal (*Nettion carolinense*)

First migration - September 28, 1941

Period max. abundance - October 20 ----

Remarks - Considerable number of these birds concentrated
here during latter part of October. Estimate 5,000
at height of migration.

Blue-Winged Teal (*Querquedula discors*)

First migration - Aug. 7 - small flocks appearing on refuge
pools, possibly locally raised birds.

Height of migration - Sept. 25 - Oct. 5. Estimate 5,000
at refuge.

Final migration - Few birds still remaining on October 31.

Shoveller (*Spatula clypeata*)

First migration - September 25

Period max. abundance - October 15-30

Remarks - Appeared at the refuge in some numbers this fall for

first time; feeding in shallow borrow pits.

✓ Estimate 5,000 present at height of migration.

Wood duck (*Aix sponsa*)

First migration - August 15

Period max. abundance - Throughout September; concentrations
of 200 - 500 birds observed on upper pool.

✓ Remarks - Common migrant and nesting bird in this region.

Redhead - *Nyroca americana*)

First migration - October 10, 1941

✓ Remarks - Scattered migrants observed from October 10 on.

Ring-Necked Duck (*Nyroca collaris*)

First migration - October 10

✓ Period max. abundance - October 27 on

Lesser Scaup (*Nyroca affinis*)

First migration - October 10

Period max. abundance - October 27, on

Remarks - Rafts of 2-5,000 ring necks and scaups observed
during latter half of October.

✓ Goldeneye (*Glaucionetta clangula americana*)

First migration - October 30

More complete data on migration will be presented in the following quarterly report as the heaviest migration usually occurs during November.

The largest concentration of waterfowl in the history of the refuge was observed here this fall. The upper pool, or first unit, which was placed in operation this year attracted many thousands of birds. Extensive beds of wild millet and smartweed along the east margin of this unit were flooded by the raising of the water level, and large concentrations of birds have been feeding in these areas for several weeks. No artificial feeding (grain or fields) has been attempted this fall as natural feeds, chiefly millet and smartweeds, are plentiful in the refuge bottoms.

Upland Game Birds

Prairie chickens began flocking in September and small flocks of five to twenty birds have been observed daily over the refuge. The prairie chicken population at this season is estimated at 150 birds, and this number will probably increase to 300-350 during the winter months. Later in the fall the birds congregate in large flocks of 50-100 as migrants move in from the surrounding uplands to winter on the area and feed in the refuge grain fields. The new seeding on the levees and a 75-acre wheat field planted for spring goose pasture are favorite feeding areas, and the birds have been observed at booming maneuvers on the open wheat field during the fall. This activity is, of course, not as pronounced at this season as in the spring months and the calls are subdued rather than the loud, resonant booming of the early spring.

The bob-white population is approximately the same as that of the 1940 season, and is estimated at 500 birds.

A few pheasants are present on the area, but have not nested as only scattered adults were observed. Not more than five or six of these birds are present on the refuge.

Food and cover are abundant over most of the area. A considerable acreage of corn, cane, and soybeans has been provided for winter feeding and the birds are already making use of these fields. The dense growth of slough grasses, weeds, and osage orange hedges are providing abundant cover for upland game birds over the refuge.

Fur-bearing Animals, Predators, Rodents, Other

There has been a general increase of fur bearers during the past season, particularly striped and spotted skunks, racoon, and mink. Muskrats are on the increase and a few houses are beginning to appear in the shallow water on the margins of the upper pool.

A small number of coyotes are present on the area. Not more than five to seven animals are ranging over the refuge and contents of droppings indicate that mice and rabbits are their principal source of food. Trapping operations will be started in November, and it is planned to remove four to five coyotes and 25-50 skunk, permission having been granted by the Service for necessary trapping and control of these species. Other fur bearers will not be taken this season, with the possible exception of muskrats. Activities of these animals are under observation to locate any trace of burrowing in the levees, and control measures will be undertaken if necessary.

Field observations and examination of scats do not indicate that game species or song birds are subject to heavy pressure at this time,

with the exception of the cottontail rabbit. However, skunk and coyote signs are numerous, particularly in upland sections near the refuge boundaries; and a limited amount of control will be undertaken this fall for these two species to remove animals ranging to adjacent farms and lessen disturbance to upland game birds wintering at the refuge.

Fish

Conditions for fish life on the refuge are improving, due to the recent impounding in the upper lake, increase of vegetation, and improvement of water conditions. Some numbers of crappie, bullheads, and channel catfish are already present in the refuge lakes, creek channels, and sloughs. No stocking of game fish will be attempted until 1942, when two of the refuge pools will be in operation and water conditions are improved.

III. REFUGE DEVELOPMENT AND MAINTENANCE

Physical Development

Major construction work undertaken by the CCC this quarter included moving of 52,700 yards of earth on the No. 4 levee, and construction of the 1500-foot No. 5 dyke and 4-foot control structure in the slough draining Big Swan Lake. The remainder of the earth work on this unit will probably be completed by the first of the year or shortly thereafter, and two of the three refuge pools will be in operation by spring of 1942. Additional construction completed by the camp included pouring of two additional core walls and placing of 2730 yards of riprap in the lower spillway. This structure is now nearing completion. One thousand feet of rail fencing was split and set out near the headquarters site.

Plantings

<u>Aquatic Species (1941)</u>	<u>Amount</u>	<u>Survival - Remarks</u>
Potamogeton pectinatus (seed)	200 lbs.	Some slight germination (5%) of the seed during treatment preparatory to planting; no growth due to excessive silt content of water and fluctuation of water level in borrow pits.
P. (Perfoliatus (seed))	40 lbs.	
Scirpus validus ✓	3/4 mi. strip along No.3 levee	95% survival. Excellent results obtained from rootstock plantings along No.3 levee to establish a protective growth.

Trees and Shrubs (1941)

<u>Species</u>	<u>No.</u>	<u>Location</u>	<u>Survival</u>	<u>Remarks</u>
Crataegus crus galli	1000 ✓	W ₂ Sec.34, T. 56 N, R.20 W	25%	Lack of moisture shortly after stock set out responsible for losses.
Rhamnus caroliniana	1000 /	" "	25%	
Celastrus scandens	1000 ✓	" "	30%	" " "
Symphoricarpus vulgaris	1000 ✓	" "	50%	" " "
Vitis cordifolia	1000 ✓	" "	30%	" " "
Lespedeza bicolor	10,000 ✓	" "	15%	This stock consisted of surplus stock obtained from SCS at end of planting season.
Juniperus virginiana	500 ✓	" "	10%	

Grasses

The levee slopes on the upper pool (Nos. 3 & 4) were seeded to timothy and redtop, using rye as a nurse crop. Excellent results were obtained this season from this seeding and the resultant growth is checking erosion and should establish a heavy sod next spring.

Collections (seed)

<u>Species</u>	<u>Amount</u>	<u>Method</u>	<u>Cost</u>
Echinocloa crus galli	1000 lbs.	Combining	2¢ lb.
Vitis	10 lbs.	Gathered, extracted (CCC & refuge labor)	75¢ lb.

Approximately 1000 lbs. of wild millet (*Echinocloa crus galli*) were harvested on the refuge this fall for the 1941 seed collection program. The approximate cost of combining this material was 2¢ per pound. Harvesting conditions this fall were the most difficult experienced to date, due to adverse weather and uneven ripening of the seed.

Ten pounds of wild grape seed were collected for shipment to the Lower Souris Refuge.

IV. PUBLIC RELATIONS

Recreational Use

The picnic ground and recreational area developed on the north shore of Big Swan Lake has been extensively used by the public, and about 500 visitors made use of this area during late summer and early fall. The largest single group of visitors consisted of 100 residents of a nearby farming community who brought picnic lunches to the area and later visited the refuge headquarters and work projects.

About 700 persons visited the refuge during this quarter, including both visitors at the headquarters and the recreational area. Residents of nearby cities and rural communities frequently drive to the refuge, especially on weekends or holidays to view the lakes and waterfowl concentrations, and request information regarding the area and use of the refuge by wildlife.

Representatives of several organizations visited the refuge in September and October, including a Saline County rural youth organization accompanied by county extension officials; the Keytesville, Mo. Lions

Club; and the American Legion Post of King City, Mo. These groups were taken on conducted tours to view the lakes and observe waterfowl concentrated at the refuge.

Official visitors at the refuge during this quarter included Mr. Salyer and Mr. Griffith of the Washington office, Mr. Sampson of the Predator Control Division, and Mr. Vroman, CCC Regional Inspector. State conservation official visitors included Agents McKinney, Green and Bickel. The following county officials also visited the refuge: Sheriff Anderson and Attorney Hotalling of Linn County, and Sheriff Widmer and County Clerk Hubbard of Chariton County.

V. ECONOMIC USES

One grazing permit was issued during this period, authorizing use of the 240-acre grazing unit in Sec. 28, T. 56 N, R. 20 W for pasturing thirty-five head of livestock during the period August 1 to October 31. This permit was terminated October 1. Total revenue collected, \$35.00.

Five permits were issued authorizing removal of thirty-six cords of dead and down timber for firewood. Revenue from this source amounted to \$27.00.

VI. OTHER ITEMS

Work projects planned for the following quarter include planting of additional trees and shrubs, landscaping, operation of a waterfowl banding station, and construction of additional rail fencing.

A WPA project has been approved for the refuge; and it is expected that a ten to fifteen man crew will be available in the near future to undertake a work program including construction of rail fencing, seeding and sodding on the levees, planting additional trees and shrubs, and related projects.

Kenneth K. Krumm

Jr. Refuge Manager

A WPA project has been approved for the refuge and it is expected that a team of fifteen men crew will be available in the near future to undertake a work program including construction of rail fence, seeding and sodding on the levee, planting additional trees and shrubs, and related projects.

Wm. A. Johnson
Refuge Manager



ROUTING SLIP

DIVISION OF WILDLIFE REFUGES

DATE: 8-15 1941

MR. SATYER

MRS. WOODIN

MR. EMMER

MRS. GARVIN

MR. DUMONT

SECTION OF OPERATIONS:

SECTION OF ERA:

MR. KIRKMAN

MR. GUSTAFSON

Mrs. Kricun

Mrs. Bourn

Dr. Bourn

Mr. Regan

Mrs. Fishman

STENOGRAPHERS:

SECTION OF LAND MANAGEMENT:

MR. LATHROP

MR. MCKINNON

SECTION OF STRUCTURES:

MR. TAYLOR

REMARKS:

Return to:

SWAN LAKE NATIONAL WILDLIFE REFUGE

Quarterly Narrative Report
May-June-July, 1941

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SWAN LAKE NATIONAL WILDLIFE REFUGE

Quarterly Narrative Report May-June-July, 1941

I. GENERAL

The refuge work program at this station progressed very satisfactorily during the May-July quarter. Principal field activities of refuge personnel included food and cover planting; patrol and maintenance of refuge levees, buildings, grounds, and fencing; supervision of the cooperative farming program; and planning additional development for the area. Construction work on the No. 4 levee is progressing very satisfactorily, and it is expected that the Swan Lake unit (pool No. 2) will be completed late this fall. Completion of this unit will place two of the three pools planned for this refuge in operation by spring of 1942, and approximately 3000 acres of marsh and lake will have been created or restored on the refuge area by that time.

A. Weather Conditions*

	<u>Rainfall</u>	<u>Max. Temp.</u>	<u>Min. Temp.</u>
May	3.37	91°	44°
June	6.23	96°	55°
July	<u>1.32</u>	<u>103°</u>	<u>57°</u>
(Total)	10.92	(Extremes)103°	44°

*Temperature and precipitation records, Weather Bureau, St. Joseph, Missouri.

Rainfall during the corresponding period last year totalled 7.16 inches and the highest temperature recorded at that time was 103°. The weather, in general, has been very similar to that of the last two seasons (May-July), characterized by hot, dry weather with a few periods of moderate precipitation.

B. Water Conditions

The water level in the upper pool (first unit completed and placed in operation) varied from 661.62 on May 31 to a crest of 663.30 on June 12. Heavy rains north and west of the refuge on June 9 flooded the creeks entering the area and raised the upper pool to 663.30, the highest level reached this year. Approximately 2,200 acre-feet of water were released from this pool through the control gate in the No. 3 levee during this period.

The Grand River, which flows past the refuge about a mile and a half distant from the west boundary, was flooded by the torrential rains of June 9, inundating the lowlands along its channel. The refuge headquarters was isolated for several days by flood waters which inundated the township highway and backed up the channel of Elk Creek, filling the dry lake bed north of the buildings. From June 11 to 14 it was necessary to travel by boat to reach other sections of the refuge. No damage occurred to levees or control structures during this flood.

The CCC draglines constructing the levee along the west shore of Swan Lake to the headquarters site were forced to suspend operations at that time until the flood waters had receded, and it was also necessary to pump out sections of the borrow pits before work could be resumed.

II. WILDLIFE

There has been a general increase of all wildlife on the area this summer, including both migrant and resident species.

A. Waterbirds

A few mallards and blue-winged teal remained at the refuge throughout the nesting season and several broods of young mallards were observed during the early summer. No nests or broods of teal were observed, however, and definite nesting records have not been established to date for this species. Flocks of 75 to 200 wood ducks have been frequently observed in the flooded timber on the upper pool, and this species will undoubtedly nest here in large numbers in the future. A flock of snow and blue geese remained at the refuge until May 23, an unusually late date for this species.

Shore Birds: A number of upland plover were observed in May and June, although no nesting records were obtained on the refuge. These birds have been observed during the nesting season in upland pastures in this area and may nest on the refuge in the future. Spotted sandpipers and killdeer were also present in some numbers throughout the nesting season.

Rails, Bitterns, Herons: Many king rails remained at the refuge during the summer and several broods of young were observed. This bird is a common summer resident in the refuge bottoms.

The American bittern is a common summer resident and nesting bird. A large number of these birds remained at the refuge this summer.

✓
The least bittern was also observed as a migrant but was not observed during the nesting season.

✓
The little green heron was a common summer resident along the refuge creeks and great blue herons were observed daily on the upper pool throughout this period although no nesting took place.

✓
A large number of American egrets concentrated at the upper pool during July, and this lake has been dotted by hundreds of these large white birds during recent weeks.

✓
Terns: Flocks of black terns have been observed throughout the summer on the upper pool. These birds will undoubtedly establish nesting colonies here in the future.

The newly completed upper pool is chiefly responsible for the increased use of the area by water birds. Large areas of marshy flats have been created at the east end of this lake, providing extensive feeding area

and for shore birds, rails, bitterns, herons, egrets, and puddle ducks.

Luxuriant beds of Muhlenberg smartweed and wild millet are springing up in the shallow water over the lake and there will be an abundance of natural feed for returning waterfowl. Food and cover conditions are good over most of the refuge, and the increased use of the area by all wildlife indicates the project is already becoming a major concentration point for migrant species and a valuable sanctuary for resident game, fur bearers and song birds.

B. Upland Game Birds:

✓
The greater prairie chicken is apparently on the increase at the refuge and surrounding farm lands. The success of the hatch this

year is not definitely known as the birds usually remain in cover much of the time at this season. The largest brood observed this summer contained eight young birds. During the past year, reports have been received of prairie chickens appearing on bottomlands and farms eight to twelve miles south of the refuge where they had not been observed for years. These birds are sometimes observed on the lawns at the primary and secondary headquarters within a few feet of the buildings, especially during the booming season and in the late summer when the young birds are exceptionally tame.

Quail are also on the increase, and pairs of nesting birds and broods have been observed along the margins of all upland and farming areas. Osage orange border hedges are favorite range of bob-white on the refuge, and nearly every section of hedge has its covey of birds.

III. REFUGE DEVELOPMENT AND MAINTENANCE

A. Physical Improvements

A twelve-foot crushed rock roadway has been constructed on the levees around the upper pool. This construction provides an all-weather trail for maintenance and patrol purposes, and the east half of the refuge may be covered in a short time from this road.

A 25-acre recreational area has been developed in a wooded park on the northwest shore of Swan Lake, near the refuge entrance. Tables, ovens, water, and sanitary facilities were constructed on the grounds by CCC labor, and a surfaced roadway and parking area were constructed to provide access to the area.

The CCC draglines have continued work on the No. 4 levee across the Swan Lake bottoms. Two operators and a crew of four enrollee oilers and levelers are employed on this project, and it is expected that the levee will be completed by late fall or before the first of the year.

Work has been started on the No. 5 levee at the southeast corner of Swan Lake, and this project will be completed during the next quarter.

A four-foot control gate will be constructed in the center of this levee to regulate the water level in this unit.

Additional riprapping was laid on the lower spillway and this structure will be completed by October 1.

B. Plantings

10,000 *Lespedeza bicolor* were planted in an eroding area in the W. $\frac{1}{2}$, Sec. 34, Twp. 55 N, Range 20 W. This planting was undertaken for soil conservation purposes and to establish food and cover in this section. Five hundred *Juniperus virginiana* were set out in an area bordering the headquarters yard, to establish additional cover. This stock was secured from planting material surplus to the needs of the Soil Conservation Service nursery at Elsberry and was set out early in May.

IV. PUBLIC RELATIONS

A. Recreational Uses

Recreational Areas: The recreational area on the Swan Lake tract was completed in July, and approximately one hundred visitors used

the grounds for picnicing during the latter part of that month. Facilities are provided for picnicing and baseball or softball, and this area will undoubtedly be extensively used by the local public as no public recreational areas are available in the vicinity, except city parks some twenty-five or thirty miles distant.

Visitors: Official visitors at the refuge during the quarter included Mr. Salyer; Mr. Gillett, Regional Inspector; and Messrs. Hall and Taylor of the Engineering Division. State and county officials visiting the refuge included Messrs. McKinney and Bickel, Conservation Agents; and County Sheriff Leo Widmer. The local public exhibits considerable interest in the refuge and a considerable number of visitors have appeared at the refuge this summer. Visitors include business and professional men from nearby cities, nearby farmers, and sportsmen from local hunting clubs. These people are given all authorized information relating to the refuge and work of the Service, and are conducted on short tours of the refuge insofar as time permits and no disturbance is caused to wildlife.

B. Violations

No refuge violations occurred during this quarter. Refuge personnel assisted the local state warden in apprehension and arrest of seven violators of the state fishing code. Two cases involved illegal taking and sale of game fish and five involved illegal seining activities. The cases were prosecuted in state court by the warden, and jail sentences totalling 120 days and fines and costs totalling \$92.25 were assessed.

V. ECONOMIC USES OF REFUGE

A. Grazing

One application was received for a grazing permit and an initial collection of \$17.50 was received with the application. This application was received late in July and covered grazing of thirty-five head of cattle from July 1 to October 30 on a 240-acre unit.

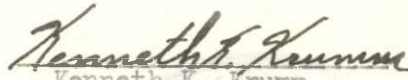
B. Cooperative Farming

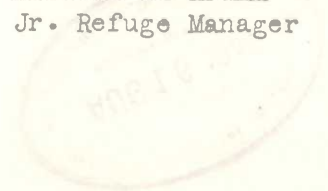

Seven cooperative farming permits involving use of approximately 475 acres of refuge lands were issued during this period. Crops to be raised for feeding purposes include corn, soybeans, and cane.

VI. OTHER ITEMS

Work projects contemplated during the next quarter include construction of rail fencing, food and cover planting, additional landscape work, posting boundaries, and seeding and sodding levees.

.....


Kenneth K. Krumm
Jr. Refuge Manager

1. ECONOMIC USE OF LANDS

2. Wildlife

The application was received from a fishing permit and an initial collection of \$17.50 was received with the application. This application was received late in July and covered a period of thirty-five days. The fee for the permit was \$10.00 and a \$7.50 fee for the application.

3. Cooperative Wildlife

Given a cooperative fishing permit, the following use of wildlife is made. All acres of refuge lands were leased during this period. There is no lease for fishing. The lease includes corn, soybeans, and oats.

4. OTHER ITEMS

At present, contemplated during the lease period include construction of a fish house, tool and boat shed, additional landscape work, posting boundaries, etc. and adding leases.



ROUTING SLIP

DIVISION OF WILDLIFE REFUGES

DATE: 2-15 1941☒ MR. SALYER☒ ① ~~MRS. WOODEN~~ New☒ ~~MR. ELMER~~ ACE☐ MRS. GARVIN☒ ~~MR. DUMONT~~ PRD

SECTION OF HABITAT IMPROVEMENT:

~~Mr. Rubichek~~Mr. Smith RNH~~Mr. Griffith~~ PEGMiss Cook mc

SECTION OF OPERATIONS:

Mr. Ball

~~Mr. Krumpholtz~~ WK② ~~Mrs. Watkins~~ Wm

Mrs. Kricun

SECTION OF ERA:

☒ ~~Mr. Regan~~ KAR.☒ ~~Dr. Bourn~~ WSB

Mrs. Fishman

☒ SECTION OF LAND MANAGEMENT:~~Mr. Barnshaw~~ B~~Mr. Anderson~~ ced

STENOGRAPHERS:

Miss Price

☒ ~~Miss Whorley~~ V.W.☒ SECTION OF STRUCTURES:~~Mr. Taylor~~ WV~~Mr. Gustafson~~ PAB

REMARKS:

Swan Lake Sanctuary
February - April 1941Return to: Cook

SWAN LAKE NATIONAL WILDLIFE REFUGE
QUARTERLY NARRATIVE REPORT
FEBRUARY, MARCH, AND APRIL, 1941

*This is a good
report - RAB*

I. GENERAL

Principal field activities at this station during the quarter ending April 30 included maintenance and repair of levees, buildings and equipment, food and cover planting, landscaping, feeding of migratory waterfowl, and supervision of farming operations by special use permittees.

A. Weather Conditions:

	<u>Rainfall</u>	<u>Max. Temp.</u>	<u>Min. Temp.</u>
February	T.	51	12
March	.96	72	32
April	3.09	86	32
Total	4.05	Extremes 86	12

Rainfall during this quarter was light, only a trace being recorded during February and a few light rains during March. Precipitation during April was normal. The total rainfall during the period was 2.11 less than that for the corresponding quarter of 1940.

B. Water Conditions:

The water level in the upper pool has been maintained at approximately 662 in compliance with Service instructions. Although precipitation was light during most of this period, heavy local showers at the head of the Elk Creek watershed kept the water in this unit at the desired level; and from February 1-17 and April 7-14 and 18-30, it was necessary to operate the control gate to release flood waters created by rains upstream. The water rose to a maximum level of 63.20 in this pool on

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5-12-41

N.W.

April 21. A total of 8,260 acre feet was released from this unit during the quarter, and at the present time this pool contains about 5000 acre feet of water. The 662 level will be maintained in this pool until June 1 when an additional two feet will be impounded. The present water level (662) is five feet below the spillway which will discharge flood water from the lake.

II. WILDLIFE

A. Waterbirds

The newly flooded upper pool attracted the largest concentration of ducks since the refuge was established. Approximately 85,000 birds were concentrated at the refuge at the height of the migration during the latter part of March and early April. Refuge cornfields were the principal source of food for the surface feeders, and large rafts of bluebills and ringnecks were noted on the deep water areas adjacent to the levees from March 15 to April 10.

The 1941 spring flight of geese at this station was unusually light, and the height of the flight occurred at a later date than usual, the heaviest wave of migration occurring from April 1-10. A small number of blue and snow geese also remained at the refuge until the first week of May, an exceptionally late date for these birds. The decrease in the number of geese concentrating here may have been due, in part, to the failure of the winter wheat crop in this section of the state, as the winter grain fields which usually afford pasture for these birds at that season were nearly all destroyed by freezing.

Populations

Species:

Canada Goose (*Branta canadensis canadensis*)

First observed - March 29, 1941

Period Max. abundance - Apr. 1-15, 1941 (400)-Apr. 4-only

Last observed - April 25, 1941

Remarks: Only a few small flocks of these geese observed during spring flight.

Lesser Snow Goose (*Chen hyperborea hyperborea*)

First observed - March 4, 1941

Period max. abundance - Apr. 1-10, 1941 (300)

Last observed as migrant - May 8, 1941

Remarks: Only scattered birds noted in association with blue geese.

Blue Goose (*Chen caerulescens*)

First observed - March 1, 1941

Period of max. abundance - Apr. 1-10, 1941 (4000)

Last observed as migrant - May 8, 1941

Remarks: The flight of blue and snow geese through this area was about 50% less than that of 1940. The main wave of migration also occurred about two weeks later than usual and was of shorter duration, although on Apr. 4 larger individual flocks were observed than any noted during the 1940 flight.

Common Mallard (*Anas platyrhynchos*)

First observed as migrant - Feb. 20, 1941

Period max. abundance - Mar. 11-25, 1941
(est. 30,000)

Last noted as migrant - April 20, 1941

Remarks: Next to pintail in abundance.

Black Duck (*Anas rubripes*)

Remarks: Scattered birds observed among other migrants during spring flight.

Pintail (*Dafila acuta tzitzihua*)

First migration - Feb. 14, 1941

Period max. abundance - Mar. 11-25, 1941 (35,000)

Last observed as migrant - Apr. 25, 1941

Remarks: Most abundant of spring migrants.

Blue-Winged Teal (*Querquedula discors*)

First migration - March 25, 1941

Period max. abundance - Apr. 5-20, 1941 (3000)

Last noted as migrant - May 1, 1941

Green-Winged Teal (*Nettion carolinense*)

First migration - February 15, 1941

Period max. abundance - March 15-30, 1941 (600)

Last observed - April 20, 1941

Wood Duck (Aix sponsa)

First observed - April 10, 1941

Remarks: Small flocks observed on refuge lakes during April. This bird is a summer resident and nests locally.

Shoveler (Spatula clypeata)

First migration - March 11, 1941

Height of migration - March 25 - Apr. 15, 1941 (2000)

Last noted as migrant - April 30, 1941

Remarks: Common spring migrant. A few birds are remaining at refuge and may nest.

American Widgeon (Mareca americana)

First migration - March 14, 1941

Period max. abundance - March 20 - Apr. 5, 1941 (1500)

Last observed as migrant - April 15, 1941

Remarks: Present in about same number as 1940 spring flight.

Gadwall (Chaulelasmus streperus)

First migration - April 2, 1941

Remarks: Few scattered birds and small flocks noted from April 2-10. An uncommon migrant.

Lesser Scaup (Nyroca affinis)

First observed - March 6, 1941

Period max. abundance - March 15-25, 1941 (2000)

Last observed - April 15, 1941

Remarks: Common spring migrant.

Ring-necked Duck (Nyroca collaris)

First observed - March 6, 1941

Period max. abundance - March 20 - Apr. 10, 1941 (2500)

Remarks: Most abundant of diving species stopping at refuge.

American Merganser

(Only record - February 15, two drakes)

During the latter half of March and the first week in April, concentrations of 50,000 to 85,000 ducks were observed daily at the refuge. The flight was probably the heaviest experienced to date although the increase was not as large as anticipated - about 10%. About 50% less geese were observed this season, probably due to the failure of the winter wheat crop which usually affords browse at this season.

B. Upland-Game Birds

Greater Prairie Chicken (*Tympanuchus cupido* ~~americanus~~)

About 250 prairie chickens wintered on the refuge this season and it is believed that about 50 to 60 pairs are nesting on the area, the remaining birds migrating to the surrounding uplands for the nesting season.

The birds began booming in mid-February, flocking to several dancing grounds over the refuge and on the south end of the No. 3 levee. On February 27, sixteen birds were noted on ice formed on the upper pool about 200 feet from the levee, going through booming maneuvers and repeatedly slipping and falling. This is the first observation we have of prairie chickens using an ice surface as a booming ground. Small flocks of three to ten birds have also been observed booming in the courtyards of the primary and secondary headquarters.

The booming season extends from mid-February to May 10 and nesting begins about April 20. Scattered individuals continue booming throughout May and as late as June 6 although the height of the season is over by the 10th of that month. The prairie chicken population on the refuge, according to our observations during the past two seasons, is increasing and the area should support 500 to 600 birds within a few years if the present rate of increase continues. Adequate nesting cover has been provided through control of fires which originate in the swamps and brush west of the refuge, and which, prior to establishment of the area, were allowed to sweep over the bottoms each winter. Booming

grounds located within farming units are left uncultivated to attract the birds during the spring months.

The refuge corn and cane fields provide abundant feed for these birds and flocks of 15 to 100 were noted daily on these areas during the early spring months.

Bob-white (*Colinus virginianus virginianus*)

The refuge bob-white population is also exhibiting an increase, and about 500 birds wintered on the area. These birds usually nest and winter along the osage orange hedges and weed patches along the margins of refuge fields. Weeds provide an abundant source of natural food during the winter and early spring months and the birds also feed to a considerable extent along the margins of cornfields and cane patches left standing during the winter months.

Pheasant

A few pheasants are seen from time to time, evidently stragglers remaining from plantings during previous years. These birds have not increased and we have no nesting records or observations of young birds recorded to date.

C. Big-game Animals (omit)

D. Fur-bearing Animals, Predators, Rodents, Others

Fur-bearing species occurring on the refuge include opossum (est. 50), muskrat (est. 25), mink (est. 30), skunk (est. 100), civet cat (est. 100), raccoon (est. 25), red fox (est. 2), and coyote (est. 3-4). Skunk and civet cat are the only species which have increased sufficiently to warrant taking of furs and it may be advisable to trap

a number of these animals by next winter. Coyotes may also require continued control although field observations indicate the population is low, especially since the east bottoms of the refuge were flooded. Four ✓ coyotes were taken during the winter of 1940 and some trapping was carried on during January and February of 1941, but no animals were taken this year. Trapping activities were hampered considerably this season by rains, floods, and springing of the traps by stray dogs which fell into a number of sets. For these reasons, trapping was discontinued early in February and further control measures will be undertaken later as the need arises.

Cottontail rabbits and mice are very abundant due to the heavy brush and grassy cover over much of the refuge and these animals are the principal prey of predators ranging over the refuge.

Marsh, red-tailed, and rough-legged ✓ hawks were abundant during the early spring months, particularly the latter species. In general, the presence of these predators is desirable as an aid in controlling the rodent population. Marsh hawks have been observed harrying prairie chickens on booming grounds but there is little evidence that waterfowl or game birds were taken or disturbed to any extent by hawks or owls.

III. REFUGE DEVELOPMENT AND MAINTENANCE

A. Physical Development

The No. 4 levee extending from the headquarters site to the north shore of Swan Lake is now under construction and will be completed by late summer. Approximately 33,300 yards of earth were moved by the CCC draglines operating on this project during this quarter. A roadway has been constructed on a 66-foot right-of-way purchased to tie in the trail on this levee with the Mendon-Sumner highway. This will eliminate use

of the temporary road and hazardous railway crossing now affording the only entrance to the headquarters site.

Completion of this levee will make possible the restoration of approximately 1000 acres of partially dry lake bed as a resting and feeding area for migratory waterfowl. A 75-acre recreation area will be provided on the north shore of this unit, and the restored lake will also serve as a display pool for the visiting public.

Other development on the area by the CCC included construction of 640 rods of fencing and clearing of 70 acres of timber from the lower pool. 860 yards of rock were quarried, crushed, and hauled to the refuge by the camp for use in surfacing roadways and other construction. 17,400 feet of Wakefield piling were sawed from timber cleared from the lower pool. This material was shipped to the Union Slough Project in Iowa.

A stone pillar type entrance gate was erected at the main refuge entrance on the Mendon-Summer road. This project was also completed by CCC labor and funds.

Additional landscaping was completed at both primary and secondary headquarters. Several clumps of fruit bearing and ornamental trees and shrubs were planted in the courtyards to improve the appearance of these areas and attract wildlife. 40,000 willow cuttings were planted along the base of the No. 3 cross levee to check wave wash. These projects were completed by CCC crews under the direction of refuge personnel.

B. Plantings

5000 trees and shrubs were set out in the NW $\frac{1}{4}$, SW $\frac{1}{4}$, Sec. 34, T. 56 N, R. 20 W, as part of a soil conservation project outlined for the refuge.

The species and numbers planted were as follows:

<u>Species</u>	<u>No.</u>	<u>Location</u>
Crataegus crusgalli, 1-2 ft. lining cut stock	1000	NW $\frac{1}{4}$, SW $\frac{1}{4}$, Sec.34, Twp. 56 N, R.20 W
Rhamnus caroliniana, 15-24 in., seedlings	1000	" " " "
Celastrus scandens, 18-24 in., seedlings (1 yr.)	1000	" " " "
Symphoricarpus vulgaris, 18-24 in., cuttings, (1 yr.)	1000	" " " "
Vitis cordifolia, 18-24 in., seedlings (1 yr.)	1000	" " " "

This planting was confined to an eroded area where considerable wash was occurring and where the stock could be advantageously used in developing food and cover for wildlife.

C. Distribution of Seed and Nursery Stock

Receipts:

<u>Species</u>	<u>Amount</u>	<u>Delivered From</u>
Potamogeton americanus	40 lbs.	Chatauqua Refuge, Express, B.L.
Potamogeton pectinatus	100 lbs.	Bear River Express, B.L.

(Planting stock for refuge)

Purchased from Board of Supervisors

IV. PUBLIC RELATIONS

A. Recreational Uses

A CCC project has been set up for construction of a recreational area on the north shore of the Swan Lake unit. The project included construction of tables, ovens, well, and other facilities for the use of the visiting public. A considerable number of visitors stop at the refuge headquarters throughout the summer months to view the area and work projects, and the proposed picnic ground should prove of considerable assistance in accommodating the visiting public.

During the National Wildlife Restoration Week, April 14-19, press releases relating to the work of the Service and the Refuge Open House article were featured in four local papers; and more than 300 visitors inspected the project at that time. On April 6 over 1000 visitors inspected the project during the annual CCC Open House, and as a result of the two "open houses" about 1400 visitors were afforded an opportunity to inspect the project and become acquainted with the work of the Service. Wildlife films taken at the refuge were exhibited at a number of business and professional men's meetings at Chillicothe and Brookfield, Missouri during this period.

V. ECONOMIC USES OF THE REFUGE

A. Timber Removal

Twenty special use permits involving sale of approximately 209 cords of fire wood were approved during the past winter; and species involved, amount, and revenue are tabulated by permittee as requested in Division Memorandum No. 91:

<u>Permittee</u>	<u>Species</u>	<u>Amount</u>	<u>Purpose of Cutting</u>	<u>Revenue</u>
W. R. Epperson	Pin Oak & Elm	4 cords	Clearing Reservoir	\$ 3.00
John Shaffer	" "	10 cords	" "	7.50
John Beemer	" "	6 cords	" "	4.50
Paul Lynn	" "	5 cords	" "	3.75
C. L. Lentz	" "	8 cords	" "	6.00
Marvin Lentz	" "	8 cords	" "	6.00
John McDonald	" "	6 cords	" "	4.50
Earl Washam	" "	4 cords	" "	3.00
John Ward	" "	6 cords	" "	4.50
Benny Kalthoff	" "	10 cords	" "	7.50
Jewel Welch	" "	16 cords	" "	12.00
Benny Myers	" "	25 cords	" "	18.75
Clarence Harness	" "	2 cords	" "	1.50
Elison Pitney	" "	4 cords	" "	3.00
Bert Donovan	" "	10 cords	" "	7.50
Melvin Wright	" "	10 cords	" "	7.50
Canning Brothers	" "	50 cords	" "	37.50
Frank Linscott	" "	5 cords	" "	3.75
Wm. Thornsberry	" "	10 cords	" "	7.50
Reams Downey	" "	10 cords	" "	7.50

B. Cooperative Farming

Two permits were approved during the quarter for farming approximately 320✓ acres of refuge land, and 120✓ acres of farm crops will be provided through these permits for feeding wildlife. Six additional applications for farming an approximate 265 acres were forwarded for approval during this period.

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Work projects contemplated during the next quarter include maintenance of the levees (seeding and sodding), fencing, setting boundary markers, cover mapping and nesting studies (waterfowl) to determine species and number of birds remaining at the refuge through the summer.

Kenneth H. Krumm

.....Refuge Manager.....



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Samuel H. Johnson
Refuge Manager

